DERMOID CYST OF THE PELVIC CONNECTIVE TISSUE.

TWO CASES, WITH A CONSIDERATION OF TWENTY-FOUR REPORTED CASES.

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THROUGH the courtesy of Drs. Munro and Bottomley, of the Carney Hospital, I have had the opportunity of observing two cases of dermoid cyst of the pelvic connective tissue, which I report because of their rarity and importance.

CASE I.—H. B.; aged thirty-five years; married; housewife; has always lived in Massachusetts. Catamenia at eighteen. No pain. Apt to be irregular. Four children. Two living. Three miscarriages. Has not been well for ten years. Is easily tired, and not at all strong physically. Eight years ago, during one of her pregnancies, the attending physician discovered a tumor in the pelvis. Patient never paid any attention to this on account of lack of symptoms. Constipated for years and habitually takes laxatives. No appetite. No urinary symptoms.

Physical Examination.—Well developed and nourished. Pale. Head, neck, and chest negative. Abdomen,—no spasm, distention, or evidence of free fluid. Some tenderness, with an indefinite mass in lower left quadrant. Fluctuant tumor posterior to rectum and pushing the latter far forward. The upper edge of the tumor is beyond the reach of the finger and is felt obscurely over the pubes. Uterus displaced upward, is Y-shaped, either from fibroids or bicornate.

Operation by Dr. J. C. Munro. Oblique incision made along left edge of sacrum and coccyx. The latter was removed. In retrorectal space a multilocular cyst size of two fists was found. On separating tumor from the sacrum, the anterior wall of the latter showed a broad groove ending at the level of the third segment in a canal, half an inch in diameter and of indefinite length. From the anterior lip of this canal there was a firm band of tissue connected with the cyst, which had to be severed. So far as could be seen, there was no direct communication between the cyst and the spinal canal. Laterally, the attachment of the cyst was firm and had to be tied and cut. Anteriorly, attachment to the rectum was not firm. The main cyst ruptured in dissection, giving escape to a thin fluid. Apparently all the cyst wall was removed, leaving a large cavity. Wound was partly closed with silkworm gut. Iodoform gauze drainage.

The further history is not remarkable. Patient made an uninterrupted recovery and has had no further trouble.

Pathological diagnosis is a dermoid cyst with a connective-tissue wall. The latter contains nerve-fibres.

CASE II.—W. C.; female; single; aged eighteen years. About six months ago noticed tumor in abdomen. This has gradually increased in size, and is at times tender and painful. No other symptoms.

Physical Examination.—Well developed and nourished. Heart and lungs negative. Immobile tumor in median line in hypogastric region. Extends into left iliac region and is composed of two nodules. The upper and larger mass is the size of a grape fruit, while the smaller and lower mass is the size of an orange. Both tumors are adherent to each other and to Poupart's ligament. Tumors feel like tense cysts, though there is no definite fluctuation. Diagnosis of adherent ovarian cyst was made.

Operation by Dr. J. T. Bottomley. Incision four inches long in the median line below the umbilicus. The peritoneal cavity was opened and a large fluctuant tumor presented. It was situated in the upper half of the pelvis, and the pelvic organs were markedly displaced to the right. The iliac vessels ran over the sac wall, and were so displaced forward that they lay just beneath the anterior abdominal wall. The peritoneum was incised, and with the iliac vessels was pushed to the right. The tumor was then tapped and a considerable quantity of light yellowish fluid containing hair and some curdy detritus escaped. An attempt was now made to excise the sac, which was adherent everywhere, but particularly adherent to the sacrum. It apparently followed the vessels beneath Poupart's. The patient did not stand the operation well, and her condition finally became so serious that work was stopped. The general peritoneal cavity was packed off and the cyst filled with gauze packing. The cyst wall was now sewed to the anterior abdominal parietes. Abdominal wound partly closed. Sterile dressing. On the day following patient showed signs of hæmorrhage—pallor, rapid pulse, sighing respiration, etc. Ether was given and the abdominal wound was reopened. The pelvis was found filled with dark, fluid blood. No evidence of fresh bleeding. Gauze packing. On the second day there was still some oozing of dark blood, so the pelvis was again packed with gauze soaked with adrenalin 1–2000. Salt solution was given with stimulants. No subsequent bleeding occurred, but the patient grew worse, and died on the afternoon of the second day.

Pathological diagnosis was dermoid cyst. Wall was composed of dense connective tissue.

From a study of the cases in the literature, with the two new ones of my own, making twenty-five in all, a good idea of the clinical aspect of these tumors can be obtained. I have selected only those cases where the diagnosis is confirmed either by operation or autopsy.

These tumors are always subperitoneal, and most frequently lie above the levator ani muscle (eighteen cases in twenty-five). In eleven cases the tumor was retrorectal and on the left side; once only on the right (Sanger). Three times (Biernacki, Page, and Germain, Case I) the tumor was clearly median. Three times (Emmet and Mannel, two cases) the cyst was anterior in Douglas's cul-de-sac. In Schultze's case there was one cyst above, the other below the levator ani. The same condition existed in Hofer's patient, but here the upper cyst lay between the layers of the broad ligament. Marchand has reported a microscopic dermoid found at autopsy between the layers of the broad ligament (cited by Hofer). In a case described by Weinlechner there was in all probability two parts to the tumor,—one above, the other below the levator; but the description is not clear enough to determine this point. A similar condition probably existed in Walzberg's patient. The tumors described by Birket and Kuster lay below the levator between the anus and coccyx.

Gussenbauer (*Präger med. Wochenschrift,* 1893, No. 36) found accessory cysts placed laterally in addition to one in the median line.

I have been unable to find a case where the cyst was situated in the ischiorectal fossa. It is best to exclude the superficial anococcygeal dermoids from this classification, since they give rise to no pelvic symptoms.

The size of these tumors varies from the microscopic finding of Marchand to the enormous growth of Ord, which nearly filled the abdominal cavity. These are, of course, extremes, and as a rule these cysts vary from the size of a hen's egg to that of a child's head.

In shape these growths are round or oval, but may be irregular as they lie in the pelvis. For the most part they are soft and fluctuant, filled with fluid which microscopically shows fat, cholesterin, and cellular débris. Hair was found in the tumors described by Trzebicky, Biernacki, Page, and Germain (Case II), and bone in Walzberg's case. Bland Sutton ("Tumors Innocent and Malignant," 1903) states that teeth may be found in dermoids in this situation, but I have been unable to confirm this observation.

The cyst wall usually consists of connective tissue lined with epithelium, representing more or less completely the structure of the skin. The stratum corneum and the stratum Malphighii can sometimes be recognized. In Hofer's case the papillary layer of the corium was not present, but in those of De Quervain and Trzebicky this layer was easily demonstrated. De Quervain was also able to demonstrate smooth muscle-fibre in the cyst wall, while nerve tissue was found in one of my cases.

The ages of the patients in this series varied from eighteen to fifty-eight years. In four cases the age is not given. Two occurred between ten and twenty. Ten between twenty and thirty. Six between thirty and forty. Two between forty and fifty, and one between fifty and sixty.

Nineteen of the twenty-five cases occurred in women in the child-bearing period of life, the sex being feminine in twenty-three of the twenty-five cases. In regard to sex, the dermoids are like the more complicated teratomata of this region, which are much more frequent in females. The teratomata are, however, usually congenital as distinguished from the dermoids which appear later in life. This is, of course, a clinical distinction, due to the fact that the dermoids, though congenital, take on growth and give rise to symptoms in adult life. On the other hand, teratomata occur very frequently in dead-born fœtuses or infants dying at an early age. In Calbet's collection of 117 cases, fifty were dead-born or died during the first days of life (Thèse de Paris, 1893). Twenty-nine out of eighty-one of Molk's cases were dead-born (Thèse de Strassbourg, 1868). Follin and Duplay reported seventy cases, sixty-one of which were still-born or died in the first month of life.

As might be expected, the dermoid cysts displace the pelvic organs more or less, the amount of displacement depending on the size and situation of the tumor. The rectum and vagina are described as being flattened, while the bladder and uterus are elevated, as a rule. In Dealma's case the bladder and urethra became gangrenous from pressure.

No definite clinical symptoms appear in these cases. The cysts may remain quiescent for years and give rise to no trouble or discomfort. The symptoms which appear may be divided under two heads, (1) Mechanical. The tumor simply by its presence may be an obstruction to labor. This was observed by von Biernacki, Page, and Sanger. In a similar way retention of urine and intestinal obstruction are caused. Retention is mentioned by Luksch, Deahna, and De Quervain, while obstruction occurred only in Dealma's patient. Lesser degrees of obstruction are more frequently mentioned, and we often meet with the expression "difficulty in urination and defecation." Krogius and Luksch mention œdema of the feet and legs, and Colonna observed mucus and blood in the stools. These symptoms can be attributed to obstruction to circulation, and it is possible that menstrual disturbances and dysmenorrhœa are due to this cause.

(2) Under the second heading, the symptoms are due to microbic infection of the cyst. We then have a rapid enlargement of the cyst and retention of urine, and intestinal obstruction results, with the addition of symptoms of infection,—rise of temperature, nausea, etc. This was well illustrated in Deahna's patient, and to a lesser degree in Emmet's case. It is worthy of note that in none of the reported cases did the tumor cause sciatica or obstruct the ureter.

I have avoided reference to rectal, vesical, uterine, and ovarian dermoids, though there is little doubt that some of the so-called rectal and uterine dermoids were primarily cysts of the pelvic connective tissue. Examples of these are reported by Danzel (*Archiv für klin. Chirurg.*, Band xvii, S. 442), Snyers (Méd. et Pharm., ii, 372, Paris), Gelstrom (*Central. für Gynäk.*), and others where dermoids ruptured into the rectum or vagina during labor. These, of course, might have been ovarian, but it is more likely that they were primarily situated in the pelvic connective tissue. Vesical dermoids may be ovarian in origin, becoming adherent, and finally rupturing into the bladder, or they may be primary in the bladder, as in a case reported by Martini (*Archiv für klin. Chirurg.*, Band xvii, S. 449). Clinically, dermoids of the bladder give rise to a distinct symptom complex, so they are simply mentioned here.

Formerly, these cysts were all supposed to be ovarian in origin till Sanger pointed out that the ovaries were intact. Further, the cases of Ord and De Quervain occurring in men refutes this idea. The later theories refer the origin to the fœtal period of life. Embryologically, these cysts contain tissues derived from one or two germ layers, ecto- and mesoderm. It is supposed that during development, bits of ecto- and mesoderm are misplaced, remain quiescent for a period of time, and finally give rise to cysts of more or less complicated structure. This theory finds support in experimental work in animals. In the development of the lower end of the body, all the germ layers are in intimate relation, and the misplacement of bits of the outer and middle layers may take place during the formation of the spinal cord, when the proctodæum invaginates to meet the neurenteric canal, or during the development of the genito-urinary apparatus. The old theories referring the origin of these tumors to Luschka's gland and to remnants of the postanal gut are no longer seriously considered. The more complicated teratoid tumors derived from all three germ layers may be fœtal inclusions, that is bigerminal, or, according to some authors, they are derived from a fertilized polar body or a segmentation sphere displaced very early in embryonic life. This has given rise to much discussion, but it need not concern us here.

Apparently the dermoids and teratomata of this region show no tendency to malignancy, as I have found no reported cases.

In diagnosis, it is of prime importance to determine the immobility of the tumor. If the growth is movable, it is not a tumor of the pelvic connective tissue. Tumors in Douglas's cul-de-sac cannot be differentiated without operation, since here we may have an adherent ovarian cyst, fibroid of the uterus, etc. A fluctuant retrorectal tumor may be an abscess, serous cyst, echinococcus, or a dermoid cyst. One can only differentiate by tapping. The presence of hair in the urine or fæces is strongly suggestive of a dermoid of the pelvic tissue, but may mean an adherent ovarian cyst. The same may be said of hair appearing in considerable amount during labor or in the lochia. Prognosis must depend entirely on the individual case.

Treatment.—Radical excision of the whole sac wall is the only rational procedure where it is possible. This may be difficult or impossible owing to dense fibrous adhesions, and always is the case if there has been suppuration. Usually, if we can judge by reports, these cysts have a definite capsule which renders excision easy.

Tapping as a therapeutic measure is to be condemned. In Ord's case, tapping through the abdominal wall resulted in fatal peritonitis. Gangrene of the urethra and base of the bladder ensued from suppuration of the cyst after tapping in

TABLE OF CASES OF DERMOID CYST OF THE PELVIC CONNECTIVE TISSUE.

Author.	Sex, Age, Symptoms.	Size, Situation, and Peculiarities of Tumor.	Treatment.	Remarks.
COLONNA. Gaz. Med. di Torino, 1896, p. 200.	Female; twenty-eight years. One normal confinement. For five months difficulty in evacuating rectum. Feeling of pressure in perineum. Tender in left iliac fossa. Mucus and blood in stools.	Four centimetres above anus could be palpated a ball-like tumor pushing rectum forward. Upper limit not made out. Tumor soft and elastic. Uterus pushed up and to right.	Removed by parasacral incision.	Recovery, twenty-six days.
DE QUERVAIN. Archiv für klin. Chirurgie, 1898, Band lvii, Heft 1, S. 129.	Male; fifty-eight years. Has used a catheter for nineteen years. Retention of urine with false passage. Fæces ribbon-like.	Rectum displaced forward and to the right. Tumor reaches from third sacral vertebræ to within a finger's breadth of the navel. Contents: brown purulent fluid with epithelial débris, fat, and cholesterin crystals. Cyst wall: connective tissue lined with epithelium, outside of which is a layer of smooth muscle-fibre.	Incised and drained; after three perineal incisions drainage (extraperitoneal) from abdomen. Three weeks later remains of sac removed through parasacral incision.	Recovery, four weeks.
SKUTSCH. Zeitschrift für Geburtshülfe und Gynäkologie, 1899, No. 40.	Female; twenty-eight years. Three confinements at term. One abortion. Five months pregnant. Difficulty in urination and defecation.	Rectum displaced forward and to right by tumor, which is about size of child's head. Uterus elevated and vagina narrow and pressed forward. Tumor can be readily palpated bimanually. Contents: yellow albuminous fluid, which contains fat and cholesterin crystals and peptone. Wall of cyst composed of connective tissue lined with epithelium.	Partly excised through perineal incisions. Drainage.	Recovery.
SKUTSCH. Zeitschrift für Geburtshülfe und Gynäkologie, 1899, No. 40.	Female; twenty-two years. One normal labor. One abortion at two months.	Tumor in left half of pelvis reaching nearly to median line. Above reaches to promontory of sacrum, below to perineum. Contents as above, and in addition pseudomucin.	Perineal excision. Drainage.	Recovery.

Walzberg. Die chirurg. Klinik in Göttingen, Jahresbericht, 1875–8, S. 121.	Female; twenty-six years. No symptoms.	Congenital tumor between anus and coccyx, size of two fists; cystic. Nearer to anus was a second tumor, size of an apple; also a third, size of a plum. Contents: peasoup-like fluid containing fat drops and degenerated epithelium, with a piece of bone.	Partial extirpation. A part reaching high into pelvis could not be removed.	Healing after two months' suppuration.
Solowjew. Ref. Central für Chirurgie, 1884, No. 6, S. 96.	Female; twenty-nine years. One abortion. Irregular menstruation. Nervous symptoms.	Retrorectal tumor nearly filling the true pelvis. Lies more on the left side. Cyst contains yellow fluid with cholesterin crystals.	Tapped from vagina. After several days, incision to left of anus, with partial extirpation. Upper part of sac not removed for fear of opening peritoneum.	Two months' suppuration. Healing.
Weinlechner. Cited by Skutsch, 1877.	Female; thirty-six years. No symptoms.	Two dermoid cysts on anterior surface of coccyx.	Partially excised, partly destroyed with fuming HNO.	Recovery after two months.
Küster. Verhandl. der deutschen Gesellschaft für Chirurgie, 13 Congress, 1884, S. 852.	No symptoms.	Dermoid cyst, size of hen's egg, between anus and coccyx.	Extirpation, suture.	This case is doubtful; probably belongs to anococcygeal dermoids.
Emmet. American Journal of Obstetrics, 1884, p. 852.	Female; twenty-two years. Repeated attacks of pelvic peritonitis. Dysmenorrhœa.	Dermoid cyst lying between peritoneum and levator ani muscle.	Laparotomy, excision. (Diagnosis before operation was ovarian cyst.)	Recovery.
Trzebicky. Wien. med. Wochenschrift, 1885, No. 13, S. 394, and No. 14, S. 422.	Female; thirty-five years. Difficulty in sitting. Increases in size with increase in intra-abdominal pressure (*i.e.*, straining). Tumor noticed for one and one-half years.	Tumor size of child's head in left perineal region. Uterus pushed to the right. Per rectum, tumor can be felt occupying whole left half of pelvis. Contents: yellow purulent fluid, with white clumps, hair, cholesterin crystals, and epithelial débris. Cyst wall lined with pavement epithelium.	Extirpation. Tumor found to consist of two parts not joining one another.	Healing after two months. Trzebicky mentions a case operated by Orlowsky. Tumor size of man's head under the skin of the perineum.

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Author.	Sex, Age, Symptoms.	Size, Situation, and Peculiarities of Tumor.	Treatment.	Remarks.
BIRKETT. Guy's Hospital Reports, 1859, Vol. v, p. 262.	Female; twenty-five years. Prominence of perineum noted for two years.	Walnut-sized tumor between rectum and coccyx. Lies a little to the right of median line. Contents: usual dermoid contents.	Extirpation.	Recovery.
ORD. Medico-Chirurgical Transactions, Vol. lxiii, 1.	Male. No definite symptoms.	Large abdominal tumor tapped from abdomen. Died in five days of general peritonitis. Autopsy showed large dermoid having its origin between bladder and rectum. Nearly filled abdomen.	Tapping (death).	Quotes Wilks and Curling, Pathological Transactions, Vol. xiii, p. 148, case of dermoid cyst in man. Tapped from rectum. Eight years later was operated for stone, the nucleus of which was hair. At this time tumor could be felt to right of rectum, which was taken to be the remains of the cyst.
MANNEL. Habil. Schrift. Marburg, 1864, S. 63. Cited by Sanger.	Female; age not given.	Cyst, size of dove's egg, between peritoneum and levator ani muscle.	....	Tumor found at autopsy.
MANNEL. Habil. Schrift. Marburg, 1864, S. 63. Cited by Sanger.	Female; age not given.	Cyst, size of hens' egg, same situation as above.	....	Tumor found at autopsy.

DEAHNA. Archiv. für Gynäkol., 1875, Vol. vii, p. 305.	Female; eighteen years. Nullipara. Sudden pain in abdomen, distention, vomiting. Retention of urine.	Lies on left of pelvis behind rectum, and reaches above to midway between navel and symphysis. Rectum and vagina displaced to right.	Tapped from rectum. This was followed by suppuration of cyst, with rapid increase in size and resulting gangrene of urethra and base of bladder. Cyst evacuated by incision between anus and coccyx.	Ten months' suppuration. Plastic closure of urethro- and vesico-vaginal fistulæ.
PILCHER, L. S. Methodist Episcopal Hospital Reports, 1895.	Male; forty-five years. Symptoms of rectal obstruction and sciatica, followed by pus infection, with pointing through left great sacro-sciatic foramen.	Pelvis filled with immovable tumor, displacing rectum to right.	Left parasacral cut; coccyx excised; osteoplastic resection of edge of sacrum; enucleation of greater part of wall of cyst, which was cut away, with escape of hair, epithelial débris, and pus. Remnant of sac left behind swabbed with pure carbolic acid. Drainage.	Rapid contraction and obliteration of cavity. Recovery, remaining complete when examined nine years later.
VON BIERNACKI. Diss. Berlin, 1887.	Female; twenty-eight years. Entered clinic in labor. Primipara.	Tumor between rectum and sacrum reaching to within four centimetres of anus. Contents: purulent fluid containing hair.	Tapped from rectum. Forceps attempted, followed by craniotomy. Cyst suppurated. Repeated incisions.	Recovery after fifty-nine days.
SANGER. Archiv für Gyn., 1890, Band xxxvii, S. 100.	Female; forty-two years. Nine confinements. During last three cyst formed an obstruction to labor.	Tumor size of child's head; lay on right side of pelvis. Rectum and vagina displaced to left, uterus displaced upward. Lies above levator ani. Contents: brownish fluid containing epithelial cells, detritus, and cholesterin crystals.	Tapped from rectum. Nine months later removed by perineal route.	Healing in three weeks.

TABLE OF CASES OF DERMOID CYST OF THE PELVIC CONNECTIVE TISSUE.—*Concluded.*

Author.	Sex, Age, Symptoms.	Size, Situation, and Peculiarities of Tumor.	Treatment.	Remarks.
PAGE. British Medical Journal, 1891, Vol. i, p. 406.	Female; forty-seven years. Seven difficult labors. Tumor noted at fifth confinement twenty years previous; sixth labor, difficult; seventh labor, craniotomy. Difficulty in evacuating bladder and rectum.	Tumor size of cricket-ball felt below umbilicus (movable). Below and posterior to this is a large elastic tumor reaching nearly to umbilicus. This tumor nearly fills pelvis. Rectum and vagina displaced forward, and latter is pressed against symphysis and much longer than normal.	Tapped from rectum. Two days later suppuration, with fever, vomiting, etc. Transverse incision behind anus. Cyst drained and sac removed.	Recovery in six weeks.
SCHULTZE. Deutsche med. Wochen., 1895, No. 22, S. 352.	Female; thirty-three years. Seven confinements; at fourth midwife noted tumor. Last labor difficult. Six weeks pregnant.	Tumor composed of two cysts,—one above, the other below the levator ani (each size of an egg). Lies between rectum and pelvic walls, reaching from anus to the left sacro-iliac synchondrosis. Contents: brown fluid.	Tapped from rectum, and after two months removed through incision (perineal).	Recovery and normal termination of pregnancy.
HOFER. Diss. Halle, 1896.	Female; thirty-seven years. Three confinements. Last confinement one year previous. Tumor noted for six years.	Tumor, size of child's head, in left gluteal region. Vagina pushed to the right. Tumor reaches into pelvis between layers of the broad ligament (left). Contents of cyst: yellow fluid in which is pavement epithelium, cholesterin, and detritus.	Diagnosis of dermoid cyst confirmed by tapping. Cyst excised by perineal incision.	Hofer mentions case reported by Marchand. The latter found a small dermoid between the layers of the broad ligament in a child.
LENNANDER. Hygiea, Band lxi, p. 431. Central. für Chirurgie, 1899, No. 28.	Female; twenty-six years. Three confinements with artificial aid.	Largest part of pelvis filled with tumor. Uterus displaced up and forward. Left Fallopian tube crosses tumor like a string.	Excised by left colpoperineotomy.	Recovery.

KROGIUS. Archiv. für klin. Chirurgie, No. lxi, S. 48.	Female; twenty-six years. Repeated attacks of intestinal obstruction since a child. Some œdema of feet.	Rectum displaced forward and to right. Tumor on left of pelvis, and can be palpated in iliac fossa.	Tumor could not be removed by laparotomy, so parasacral cut was made and coccyx and part of sacrum were removed and cyst excised. Drainage.	Recovery.
LUKSCH. Wiener klin. Wochenschr., 1899, S. 249.	Female; thirty-nine years. One child born dead (with forceps). In 1891, retention of urine (January). In July, 1891, noticed tumor. Later in year difficulty in defecation and urination, with œdema of feet.	Rectum displaced forward and to the left. Uterus displaced upward. Vagina long and narrow. Fistulæ in vagina and perineum. Cysts with dermoid contents.	Three cysts excised by removing coccyx.	Recovery.
GERMAIN. (Operated by Munro.)	Female; thirty-five years. Four confinements. Two living children. Three miscarriages. Constipation. Loss in weight.	Fluctuant tumor size of fist behind rectum. Rectum and vagina pushed forward. Uterus displaced upward. Indefinite tender mass in left iliac region.	Excision.	Recovery.
GERMAIN. (Operated by Bottomley.)	Female; eighteen years. Nullipara.	Fluctuant, tender mass in left iliac region extending into pelvis. Mass size of two fists; immobile.	Abdominal incision (attempted excision). Drainage.	Death from concealed hæmorrhage.

Deahna's case. In the patients of Page and von Biernacki, suppuration of the cyst caused by tapping necessitated immediate operation. Tapping followed by injection of irritants is mentioned only to be condemned. Incision and drainage can be resorted to where a hasty operation is demanded, as, for example, during labor, when the cyst is an obstruction. As a rule, this is not a satisfactory procedure, as is shown by the reports of von Biernacki and Solowjew, where this operation was followed by two months of suppuration.

The choice of operative measures must depend on the individual case. The lateral perineal incision extended is necessary along the edge of the sacrum, with or without excision of the coccyx gives ample room for any cyst not extending above the pelvic brim. For cysts rising into the abdomen, median laparotomy must be the operation of choice, or combined perineal and abdominal operation may be required. De Quervain was able to loosen the upper attachments of the cysts in his patient by an extraperitoneal operation, but this is exceptional. Page made a transverse incision between the anus and the coccyx, drained the cyst, and was able to remove the sac through this opening. Even after total removal of the sac, drainage is usually advisable on account of dead space.

SUMMARY.

1. Dermoid cysts of the pelvic connective tissue are of rare occurrence.
2. They appear most frequently in women in the child-bearing period of life.
3. Their most common situation is posterior to the rectum and above the levator ani muscle.
4. They can be cured only by radical surgical interference.
5. Their origin is to be referred to the fœtal period of life.

I have appended a table of the reported cases. Some of these were taken from the works of Sanger and De Quervain; others were derived from various sources. All were confirmed except the reports of Mannel and Weinlechner, which I could not obtain in the original.